

WHAT IS CLAIMED IS:

1. A method for processing command information, the method comprising:
  - (a) detecting a real time event; and
  - (b) causing commands in a real time event command buffer to be fetched and consumed in response to the real time event.
2. The method of claim 1 wherein step (a) further comprises:
  - (a1) providing an event selector signal to a comparator;
  - (a2) providing a plurality of event signals to the comparator; and
  - (a3) generating an event detection signal when an event signal is equivalent to an event selector signal.
3. The method of claim 1 wherein step (b) further comprises providing the commands in the real time event command buffer to be processed by a command processor
4. The method of claim 1 wherein the real time event includes a system command from a system command buffer processed by a command processor, the method further comprising:
  - (c) first consuming all of the commands within the real time event command buffer; and
  - (d) in response to processing all of the commands of the real time event command buffer, processing a next system command within the system command buffer.
5. The method of claim 1 further comprising:
  - (c) detecting a second real time event; and
  - (d) causing commands in a second real time command buffer to be fetched and consumed in response to detecting the second real time event.

6. A method for processing command information, the method comprising:
- (a) providing system commands to a command processor from a system command buffer
  - (b) detecting a real time event;
  - (c) fetching commands in a real time event command buffer in response to the real time event;
  - (d) providing the commands in the real time event command buffer to the command processor; and
  - (e) consuming the real time event commands by the command processor.
7. The method of claim 6 wherein step (b) further comprises:
- (b1) providing an event selector signal to a comparator;
  - (b2) providing a plurality of event signals to the comparator; and
  - (b3) generating an event detection signal when an event signal is equivalent to an event selector signal.
8. The method of claim 6 further comprising:
- (a1) fetching the system commands from the system command buffer;
  - (b1) in response to detecting a real time event, pausing the fetching of the system commands; and
  - (c1) upon the processing of all the real time event commands in the real time event command buffer, resuming the fetching of system commands from the system command buffer.
9. The method of claim 6 further comprising:
- (f) detecting a second real time event;
  - (g) fetch commands in a second real time event command buffer;
  - (h) providing the commands of the second real time event command buffer to the system processor; and
  - (i) consuming the second real time event commands by the system processor.

10. A method for processing command information, the method comprising:
- (a) loading a real time event into a real time event detector;
  - (b) providing a system command from a system command buffer to a command processor;
  - (c) detecting a real time event;
  - (d) fetching commands in the real time event command buffer;
  - (e) providing the commands of real time event command buffer to the system processor; and
  - (f) consuming the real time event commands by system processor.
11. The method of claim 10 wherein the step (c) further comprises:
- (c1) providing an event selector signal to a comparator;
  - (c2) providing a plurality of event signals to the comparator; and
  - (c3) generating an event detection signal when an event signal is equivalent to the event selector signal.
12. The method of claim 10 further comprising:
- (g) loading a second real time event into the real time event detector.

13. An apparatus for processing command information, the apparatus comprising:  
a command processor for processing system commands from a system command buffer;  
a real time event engine which monitors a plurality of event signals for a real time event; and  
a real time event command buffer, containing a plurality of real time event commands, operably coupled to the real time event engine, wherein when the real time event occurs, the real time event commands are fetched and consumed by the command processor,
14. The apparatus of claim 13 wherein the first real time event engine comprises:  
a real time event detector comprising:  
an event table containing an event selector;  
a comparator operably coupled to the control register for receiving the event selector; and  
a plurality of engines providing the plurality of event signals to the comparator wherein the comparator compares the plurality of event signals to the event selector and produces an event detection signal when an event signal matches the event selector.
15. The apparatus of claim 14 wherein the event table further contains a command buffer pointer and a length of command buffer field wherein the command buffer pointer points to a command buffer and the length of command buffer field provides the number of commands within the command buffer.
16. The apparatus of claim 14 wherein one of the engines is a three-dimensional video graphics engine.
17. The apparatus of claim 13 wherein the event table is stored in a local command processor memory.

18. The apparatus of claim 14 further comprising a real time event controller which programs the real time event detector with the real time event selector for the detection of the real time event.

19. The apparatus of claim 13 further comprising:

a second real time event engine which monitors the monitors the commands provided to the command processor for a second real time event; and

a second real time event command buffer, containing a plurality of second real time events commands, operably coupled to the second real time event engine, wherein when the second real time event occurs, the second real time commands are fetched and consumed by the command processor.

20. An apparatus for processing command information, the apparatus comprising:  
a command processor for processing system commands from a system command buffer;  
a first real time event engine which monitors a plurality of event signals for a first real time event;  
a first real time event command buffer, containing a plurality of first real time event commands, operably coupled to the first real time event engine, wherein when the first real time event occurs, the processing of the system commands is paused and the first real time event commands are fetched and consumed by the command processor;  
a second real time event engine which monitors the plurality of event signals for a second real time event; and  
a second real time event command buffer, containing a plurality of second real time event commands, operably coupled to the second real time event engine, wherein when the second real time event occurs, the processing of commands by the command processor is paused and the second real time event commands are fetched and consumed by the command processor.

21. The apparatus of claim 20 further comprises:  
the first real time event engine comprises a first real time event detector having a first event selector and a first comparator which receives the first event selector;  
the second real time event engine comprises a second real time event detector having a second event selector and a second comparator which receives the second event selector; and  
a plurality of engines operably coupled to the first comparator and the second comparator, whereupon when one of the event signals matches the first event selector, a first event detection signal is produced by the first comparator and when one of the event signals matches the second event selector, a second event detection signal is produced by the second comparator..

22. The apparatus of claim 21 wherein one of the plurality of engines is a three dimensional graphics engine.

23. A graphics controller comprising:

a command processor for processing system commands from a system command buffer;

a first real time event engine which monitors a plurality of event signals for a first real time event; and

a first real time event command buffer, containing a plurality of first real time event commands, operably coupled to the first real time event engine, wherein when the first real time event occurs, the processing of the system commands is paused and the first real time event commands are fetched and consumed by the command processor.

24. The graphics controller of claim 23 further comprising:

a second real time event engine which monitors the plurality of event signals for a second real time event;

a second real time event command buffer, containing a plurality of second real time event commands, operably coupled to the second real time event engine, wherein when the second real time event occurs, the processing of commands by the command processor is paused and the second real time event commands are fetched and consumed by the command processor.

25. The graphics controller of claim 24 wherein the second real time event of the second real time event engine is programmed by the first real time event engine.